

CLAIMS:

1. Elastic hinge formed into a monolithic structure (18), in which the elastic hinge separates the monolithic structure (18) in a rotating structural part (21) and a fixed structural part (20), and in which the elastic hinge allows rotation of said rotating structural part (21) relative to said fixed structural part (20), said elastic hinge being formed by forming at least one first slot-like element (22) into said monolithic structure (18), in which the or each first slot-like element (22) defines the elastic hinge and thereby at least one rotation axis (Y) of the elastic hinge, characterized in that at least one rod-like or plate-like element (27) is formed into said monolithic structure (18) by forming at least one second slot-like element (23) into said monolithic structure (18).
2. Elastic hinge according to claim 1, characterized in that the or each first slot-like element (22) comprises at least two segments (24, 25) defining a plane (X-Z), whereby the or each second slot-like element (23) runs approximately parallel to one segment (24) of a corresponding first slot-like element (22) thereby defining a rod-like or plate-like element (27).
3. Elastic hinge according to claim 2, characterized in that the displacement or rotation axis (Y) of the elastic hinge runs approximately perpendicular to said plane (X-Z).
4. Elastic hinge according to any one of the preceding claims 1 to 3, characterized in that the or each first slot-like element (22) comprises at least two segments, whereby a first segment (24) runs in the direction of a first axis (X) and a second segment (25) runs mainly in the direction of a second axis (Z) being perpendicular to said first axis (X), and whereby the rotation axis (Y) of the elastic hinge runs in a direction perpendicular to said plane (X-Z) defined by the first axis (X) and the second axis (Z).
5. Elastic hinge according to any one of the preceding claims 1 to 4, characterized in that the or each first slot-like element (22) is formed into said monolithic structure (18) in a way that the or each first slot-like element (22) only extends to the exterior

of the monolithic structure (18) in the direction of the rotation axis (Y) of the elastic hinge, whereby the first slot-like element (22) is completely surrounded by the monolithic structure (18) in the direction of the axis (X, Z) defining said plane (X-Z).

- 5 6. Elastic hinge according to any one of the preceding claims 1 to 5, characterized in that the or each second slot-like element (23) is formed into said monolithic structure (18) in a way that the or each second slot-like element (23) extends to the exterior of the monolithic structure (18) in the direction of the rotation axis (Y) of the elastic hinge and in the direction of one axis (X) defining said plane (X-Z).
- 10 7. Elastic hinge according to any one of the preceding claims 1 to 6, characterized in that the or each first and second slot-like elements (22, 23) are formed into said monolithic structure by a wire Electro Discharge Machining process.
- 15 8. Elastic hinge according to claim 7, characterized in that the or each second slot-like element (23) is formed into said monolithic structure by the same wire Electro Discharge Machining process used to form the or each first slot-like element (22) into said monolithic structure.
- 20 9. Device comprising at least one elastic hinge formed into a monolithic structure (18) of said device, in which the or each elastic hinge separates the monolithic structure in a rotating structural part (21) and a fixed structural part (20), and in which the elastic hinge allows rotation of said rotating structural part relative to said fixed structural part, said elastic hinge being formed by forming at least one first slot-like element (22) into said monolithic structure, in which the or each first slot-like element (22) defines the elastic hinge and
25 thereby at least one rotation axis (Y) of the elastic hinge, characterized in that at least one rod-like or plate-like element (27) is formed into said monolithic structure (18) by forming at least one second slot-like element (23) into said monolithic structure (18).
- 30 10. Device according to claim 9, characterized in that the or each elastic hinge is formed according to any one of the preceding claims 2 to 8.
11. Method for the manufacture of an elastic hinge into a monolithic structure, in which the elastic hinge separates the monolithic structure in a rotating structural part and a

fixed structural part, and in which the elastic hinge allows rotation of said rotating structural part relative to said fixed structural part, by performing the following steps:

- a) providing a monolithic structure,
- b) forming at least one first slot-like element into said monolithic structure,
- 5 thereby defining an elastic hinge, whereby said elastic hinge defines at least one rotation axis (Y) of the elastic hinge,
- c) forming at least one rod-like or plate-like element into said monolithic structure by forming at least one second slot-like element into said monolithic structure.

- 10 12. Method according to claim 11, characterized in that the or each first slot-like element will be formed in a way that the or each first slot-like element comprises at least two segments, in which a first segment runs in the direction of a first axis (X) and a second segment runs mainly in the direction of a second axis (Z) being perpendicular to said first axis (X), and in which the rotation axis (Y) of the elastic hinge runs in a direction
- 15 perpendicular to said plane (X-Z) defined by the first axis (X) and the second axis (Z).

13. Method according to claim 12, characterized in that the or each second slot-like element will be formed in a way the or each second slot-like element runs approximately parallel to one segment of a corresponding first slot-like element thereby defining a rod-like
- 20 or plate-like element.

14. Method according to any one of the preceding claims 11 to 13, characterized in that the or each first slot-like element will be formed into said monolithic structure in a way that the or each first slot-like element only extends to the exterior of the monolithic
- 25 structure in the direction of the rotation axis (Y) of the elastic hinge, whereby the or each first slot-like element is completely surrounded by the monolithic structure in the direction of the axis (X, Z) defining said plane (X-Z).

15. Method according to any one of the preceding claims 11 to 14, characterized
- 30 in that the or each second slot-like element is formed into said monolithic structure in a way that the or each second slot-like element extends to the exterior of the monolithic structure in the direction of the rotation axis (Y) of the elastic hinge and in the direction of one axis (X) defining said plane (X-Z).

16. Method according to any one of the preceding claims 11 to 15, characterized in that the or each first and second slot-like elements will be formed into said monolithic structure by a wire Electro Discharge Machining process.